

Laser-fabricated castor oil-capped silver nanoparticles.

Abstract

Silver nanoparticles were fabricated by ablation of a pure silver plate immersed in castor oil. A Nd:YAG-pulsed Q-switch laser with 1064-nm wavelength and 10-Hz frequency was used to ablate the plate for 10 minutes. The sample was characterized by ultraviolet-visible, atomic absorption, Fourier transform-infrared spectroscopies, and transmission electron microscopy. The results of the fabricated sample showed that the nanoparticles in castor oil were about 5-nm in diameter, well dispersed, and showed stability for a long period of time.

Keyword: Laser ablation; Silver nanoparticles; Castor oil.